federal register

THURSDAY, DECEMBER 6, 1973
WASHINGTON, D.C.

Volume 38 ■ Number 234

PART III

ENVIRONMENTAL PROTECTION AGENCY

■

FUEL REGULATIONS

Control of Lead Additives in Gasoline

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

PART 80—REGULATION OF FUELS AND FUEL ADDITIVES

Control of Lead Additives in Gasoline

On February 23, 1972 (37 FR 3882), the Administrator proposed regulations providing for the general availability of lead-free gasoline by July 1, 1974 and a reduction in the lead content of leaded gasoline to 1.25 grams per gallon by 1977. The lead-free gasoline regulations were proposed primarily to ensure the availability of lead-free fuel for use in automobiles designed to meet Federal emission standards with lead-sensitive emission control devices. The Agency recognized that these regulations would also result in a reduction in lead emissions from the new automobile segment of the vehicle population, which would be equipped with those devices. However, based on public health consideration, it was considered necessary, to propose a reduction in the lead content of leaded gasoline as well.

After consideration of the information provided during public hearings and an extended comment period, as well as additional information on the health effects of airborne lead and the adverse effects of lead on emission control devices, the Administrator determined that the two regulations should be dealt with separately. On January 10, 1973, the regulations providing for lead-free gasoline were promulgated, and the regulatory sections providing for a reduction in the lead content of leaded gasoline were reproposed. (38 FR 1255 and 38 FR 1258)

The leaded gasoline regulations were reproposed because the Agency's position on the health effects associated with lead emissions changed substantially. The Administrator had originally proposed the regulations based on the conclusions that airborne lead levels exceeding 2 micrograms per cubic meter were associated with a sufficient risk of adverse physiological effects to endanger public health. After evaluation of the public comment and additional information on this issue, the Administrator determined that it was difficult, if not impossible, to establish a precise level of airborne lead as an acceptable basis for a control strategy. The original health effects analysis was revaluated in view of this finding. The resulting new health position paper concluded that airborne lead can either be directly absorbed through the lungs as people breathe, or can settle out of the air to contaminate dirt which may be consumed by children. Strong evidence existed which supported the view that through these routes airborne lead contributes to excessive lead exposure in urban adults and children. In light of this evidence of health risks, the Administrator concluded that it would be prudent to reduce preventable lead exposure.

The reproposed regulations provided for a reduction in the average lead content of leaded gasolines to 1.25 grams per gallon over a four year period as follows: 2.00 grams per gallon in 1975, 1.70 grams per gallon in 1976, 1.5 grams per gallon in 1977, and 1.25 grams per gallon in 1978. The specified average lead levels referred to the average lead levels of leaded gasoline produced by an individual refinery during any quarter of the specified year.

The final regulations contain a revised lead-reduction schedule based on the Administrator's determination that averaging over all grades of gasoline, including lead-free grades, is preferable to averaging over the leaded grades alone. The schedule has been adjusted to moderate the impact in the early years and to extend it for an additional year. This is discussed in greater detail below. The revised schedule prescribes lower allowable lead content levels, but the overall amount of lead used in gasoline would equal the lead usage expected to result from the reproposed leaded grade reduction schedule in 1979. The reduction schedule under this total pool averaging approach is 1.7 grams per gallon in 1975, 1.4 grams per gallon in 1976, 1.0 grams per gallon in 1978, and 0.5 grams per gallon in 1979. The various averaging alternatives considered by the Administrator are discussed below.

The reproposed reduction schedule was designed to accomplish a 60–65 percent decrease in lead usage from base 1971 by supplementing the projected increasing use beginning in 1974 of lead-free gasoline by new automobiles with catalytic (lead-sensitive) emission control systems. The schedule promulgated below also is designed to achieve the targeted decrease, and generally maintain the reproposed average lead contents for the leaded grades of gasoline.

The Administrator's judgment is that the promulgated reduction schedule is reasonable from the standpoint of protection of health and from the standpoint of economic and technological feasibility. While implementation of this schedule is reducing lead content of gasoline, a joint effort will be made by the Agency and the Department of Health, Education and Welfare to further examine lead emissions from automobile exhausts, to determine whether additional regulation is necessary.

Statutory basis. Section 211(c)(1) of the Clean Air Act authorizes EPA to "control or prohibit the manufacture, introduction into commerce, offering for sale, or sale of any fuel or fuel additive for use in a motor vehicle or motor vehicle engine * * * if any emission products of such fuel or fuel additive will endanger the public health or welfare". The scheduled reduction in the use of lead additives in gasoline to achieve a significant reduction in lead emissions from motor vehicles by 1978 is based on the finding that lead particle emissions from motor vehicles present a significant risk of harm to the health of urban populations, particularly to the health of city children. It is the Administrator's view that the statutory language quoted above does not require a determination that automobile emissions alone create the endangerment on which controls may be based. Rather, the Administrator believes that in providing this authority, the Congress was aware that the public's exposure to harmful substances results from a number of sources which may have varying degrees of susceptibility to control.

Health implications of airborne lead—Introduction. The issue concerning the contribution of automobile lead exhausts to the country's lead exposure problem is complex and controversial. In order to complete a fair assessment of this problem, EPA has made a concentrated effort to obtain and review all the medical and scientific evidence. The Agency has repeatedly requested information and comments from the medical and scientific communities as well as the general public. Since the reproposal of the regulations, information gathered through the comment period on the reproposed regulations, earlier comment periods on the originally proposed regulations, and surveys of relevant studies by EPA personnel have been thoroughly reviewed and evaluated by a task force of EPA medical experts and scientists. A paper entitled "EPA's Position on the Health Implications of Airborne Lead" sets forth in detail the Agency's evaluation that there is a health basis for reducing the use of lead in gasoline. A copy of this paper is available from the Publications Section, Environmental Protection Agency, 401 M Street SW, Room 238W, Washington, D.C. 20460.

General summary of health issue. Environmental lead exposure is a major health problem in this country. A small but significant portion of the urban adult population and up to 25 percent of children in urban areas are over-exposed to lead. The lead exposure problem is caused by a combination of sources including food, water, air, leaded paint, and dust. The aggregate contribution of lead from all these sources poses a significant threat to health. However, it is extremely difficult to determine what percentage of the problem each separate environmental factor contributes. Since these are additive sources whose importance varies considerably among individuals it is likewise difficult to determine what impact would be achieved by partial or total reduction of lead from any source. Should the lead in all sources be reduced, however, it seems clear that the situation would be substantially improved. Leaded gasoline is a source of air and dust lead which can be readily and significantly reduced in comparison to these other sources. It is also one of the few lead sources not yet subject to any controls other than EPA's lead-free gasoline regulations.

Lead from gasoline accounts for approximately 90 percent of airborne lead, total lead additive usage being well over 200,000 tons a year. Lead from stationary sources and deteriorating leaded paint from buildings, combined with lead from gasoline cause high lead levels in dirt and dust. Of these sources, lead from gasoline is the most ubiquitous source of lead found in both the air and the dirt and dust in urban areas. Human exposure to this lead takes place by in-

halation and by ingestion of dirt and dust contaminated by air lead fallout. Since exposure to lead among the general population is widespread, it is reasonable that efforts be made to reduce preventable sources of lead exposure including lead emissions resulting from lead in gasoline.

Many of those disagreeing with the reproposed regulations based their comments on EPA's failure to show sufficient evidence of adverse health effects specifically caused by the use of lead additives in gasoline. While most agree that the combustion of leaded gasoline causes an increase in the amount of lead in the environment, they do not believe that lead in gasoline represents a sufficient endangerment to health or a sufficient risk to the environment to warrant promulgation of controls. The arguments against the position set forth in EPA's reproposed regulations include the following: (1) EPA has failed to show a clear correlation between lead levels in the air and those in the blood of exposed individuals; (2) lead from dust and dirt does not represent a significant threat to body burden of lead; (3) leaded paint is the primary cause of childhood lead poisoning and lead in gasoline does not play an important role in lead poisoning or excessive lead exposure; (4) lead in food and water and not airborne lead are the principal sources of lead to the general population.

A discussion of the four major areas of criticism and a summary of the significant new information received since the regulations were reproposed are provided below.

I. *Is there a correlation between air lead levels and blood lead levels?* A portion of the comments received were critical of EPA's reproposed regulation on the basis that consistently strong correlations have not been found between air lead and blood lead levels. The conclusion expressed by many comments is that except for persons whose occupations bring them in close contact with environmental lead, exposure to airborne lead does not contribute to increased blood lead levels and does not pose a significant threat to health.

These comments cite several studies which did not demonstrate a strong correlation between air lead and blood lead levels. For example, The Seven Cities Study did not show a close correlation between increase in blood lead levels and simultaneous increases in air lead exposures. Blood lead levels were lower among the New York City residents studies than the Philadelphia residents, despite the fact that air lead exposures among the New York residents were actually greater than those in Philadelphia. Also cited as evidence against EPA's position is the observation that despite significant increases in the use of lead in gasoline in recent years there have been no discernible increases in blood lead levels of populations so exposed.

Residential differences in blood leads levels have also not always corresponded to differences in air lead exposures. For example, studies of primitive populations, as well as studies of rural U.S. populations, have shown that the blood lead levels in some of these groups are as high or higher than those of persons living in industrial areas, even though the air lead levels in those rural areas should have been much lower. A comparison between London day and night taxi drivers has also shown no significant differences in blood lead levels but did find differences in exposure to carbon monoxide suggesting that despite the possibility that air lead exposure in the day may have been higher than at night, this was not reflected in blood lead increases. However, differences in smoking intensity, as well as actual differences in air lead exposure between groups, could explain these results and neither were measured.

In summary, a number of comments have criticized EPA's position on the basis that there is not a good correlation between air lead exposure and blood lead levels.

The Agency has weighed against these criticisms studies which have shown that airborne lead does contribute significantly to lead exposure in the general population. For example, using a pilot lead isotope approach, preliminary data show that airborne lead at 2 $\mu g/m^3$ can contribute as much as ⅓ to total lead exposure in man. This result is consistent with data concerning the deposition of lead particles in the pulmonary tract and the absorption of such particles into the blood stream.

An unpublished study in Japan similar to the Seven Cities Study, but which has not yet been completely analyzed, has preliminarily demonstrated that airborne lead exposures below 2 $\mu g/m^3$ affect blood lead levels.

Chamber studies in carefully controlled environments, have shown significant increases in blood lead of men exposed to air lead slightly greater than 3 $\mu g/m^3$.

Differences in the blood lead levels between urban and suburban residents in the same geographic area have been found. When comparable groups with similar lead intakes from other sources besides air were studied, blood leads were consistently higher in urban areas and near highways where air lead concentrations were greatest. Thus while correlations between blood leads and air lead at lower exposure levels are not always good, the evidence indicates that air lead does contribute to general population lead exposure.

Failure to find consistent correlations does not in the Administrator's judgement invalidate the above conclusions. Studies which have come to contrary conclusions have generally failed to take into account the influence of other sources of lead on blood lead levels in people being studied. In the Seven Cities Study, for example, these other sources of lead influencing blood lead levels were not adequately considered in the blood lead-air lead comparisons. EPA has reanalyzed the Seven Cities Study and has found that air lead was a significant, though not the most influential factor affecting blood lead levels. Further, in the Seven Cities Study, urban-suburban differences in blood leads between comparable groups were consistently found which at least in part reflect differences in air lead exposure.

In summary, absorption of air lead does contribute to total lead exposure and when added to lead from other sources such as food and water results in total exposure that is excessive. Thus, the partial removal of lead from the air will help to reduce the degree of excess lead exposure which currently exists among adults and children in the United States.

II. *Does dust lead contribute to lead poisoning in children?* Many comments received by the Agency express the viewpoint that the primary cause of lead poisoning in children is ingestion of lead-based peeling paint. Investigations of cases of clinical lead poisoning in children have repeatedly demonstrated peeling leaded paint as the major source of exposure. Since peeling leaded paint has consistently been observed in the environment of lead poisoned children, many commentors thought it unlikely that lead in dust and dirt could make a significant contribution to this problem. They also point out that lead in dust could be caused by peeling or erosion of leaded paint in or near a home.

One commentor cites X-ray studies of the abdomen among children with lead-poisoning as showing paint chips in the majority of instances. Another argues that differences in blood lead levels between Black and Puerto Rican children could not be explained by exposure to different quantities of lead in dust. Further, studies have shown that animals do not absorb lead from dust as readily as they absorb lead from paint.

Commentors have criticized the Agency for considering that the El Paso Study supports the dustfall hypothesis related to lead in gasoline. In the El Paso Study, children living near a leadsmelter were examined for blood lead levels and for sources of lead in their environment. These results showed that children living nearest the smelter had the highest blood lead levels and that dust lead was a probable major cause. Many commentators, however, considered the El Paso Study applicable only to stationary lead sources and not to lead in gasoline which is different in particle size and chemical composition from smelter-emitted lead.

EPA recognizes the importance of leaded paint as a source of lead exposure for children and that it is the primary cause of clinical lead poisoning. However, based on the evidence available to it, EPA does not believe that leaded paint is the only significant source of lead contributing to excessive lead exposures in children. The Agency's position is that numerous sources contribute to childhood exposure including lead in food, water, air, dust, and dirt as well as paint. Among these sources, contaminated dust and dirt from motor vehicles exhausts are believed to be important exposure routes.

Currently, the contention that lead contamination of dust and dirt by automotive emissions is a significant source of lead exposure is a hypothesis consistent with information provided by a vari-

ety of studies. However, at this time, not all links in the argument have been established beyond dispute and no single study has collectively inter-related all steps in the exposure process to conclusively inter-related all steps in the exposure process to conclusively prove or disprove the hypothesis. Despite the existing uncertainties, comments received from the majority of scientists not affiliated with industrial or environmental groups support the contention that dust is an important source of exposure. This is based on the following evidence:

A. Environmental sampling in a number of cities has demonstrated the ubiquitous presence of lead contaminated dust in urban areas. These measurements were taken inside and outside of buildings including homes and schools. Dust lead measurements outside homes commonly ranged from 0.1 to 0.5 percent lead by weight. Measurements well in excess of 0.5 percent have also been recorded. Inside homes, samples were found to contain lead contents ranging from 0.05 to 0.2 percent and in some instances as high as 0.5 percent. Current Federal regulations have already established that lead concentrations in paint in excess of 0.5 percent represent a definite hazard to children and serious consideration is being given to reducing the allowable level to 0.06 percent. In testimony before the United States Senate, Dr. Merlin DuVal, at the time Assistant Secretary for Health and Scientific Affairs at HEW, commented on an appropriate safe level for lead in paint:

> Based on information now available to us, we are satisfied that it is technologically feasible, and desirable from a health viewpoint to move toward the .06 percent standard recommended by the American Academy of Pediatrics.

B. As was stated above, high lead concentrations in dust are prevalent in urban areas. It is not clear in all instances, which sources are contributing most to this contamination. Comments received by the agency point out that high lead levels in some cases may be caused by the chipping or peeling of leaded paint from interior and exterior surfaces. EPA agrees that this is true. In other cases, the lead dust content is clearly the result of lead emission from stationary sources such as smelters. However, EPA believes an important and the most ubiquitous source of lead in dust is the exhaust of automobiles using leaded gasoline. Annually, over 200,000 tons of lead are used as additives in gasoline. The vast majority of this lead is emitted into the environment. Although significant amounts of lead remain airborne for extended periods of time, evidence indicates that a large quantity of the exhaust lead rapidly settles to the ground within several hundred feet of the source. Measurements of lead in dust and soil further indicate that lead content decreases with increased distance from the roadway. It has also been found that dust lead levels in homes near heavily traveled roadways are significantly higher than in comparable homes located along side streets. It should be noted that the majority of studies reporting high levels of lead in dust and dirt did not associate sources of peeling leaded paint or stationary lead sources with the lead dust measurements. Accordingly, the Agency believes that in most circumstances lead from automobile exhaust is the primary source of lead in dust and soil in urban areas.

C. The general environment of urban children commonly includes dirt and dust contaminated with lead. A large percentage of children, especially between the ages of one and three years, are known to ingest non-food objects in their mouths. It has been demonstrated that children living in high dust lead environments have greater quantities of lead on their hands than children living in less contaminated environments. The existence of leaded dust on the hands of urban children has been highlighted by the common occurrence of inadvertent lead contamination of finger prick blood lead specimens taken from these children.

D. Children who ingest leaded dust and dirt can be expected to absorb some of the lead into their bodies. Though it is difficult to determine the precise amount of lead that would be absorbed, animal experiments suggest that appreciable quantities of this lead, whether from smelters, paint or gasoline exhaust, are absorbed. Further, it has also been shown that at least some children residing in environments heavily contaminated by leaded dust and dirt absorb enough to suffer from subclinical and even clinical effects of lead overexposure. This was particularly true in the case of El Paso, mentioned above. Though the lead source was a smelter, animal studies indicate that lead in dust due to leaded gasoline would be absorbed in quantities comparable to that emitted by the smelter. Another study from Charleston, South Carolina indicates that children residing in homes near high soil lead concentrations had a greater frequency of lead poisoning than children residing in less contaminated areas. This study suggests that lead from soil was absorbed, although it is not clear what sources were primarily responsible for those high soil lead levels. It should be further noted that instances such as those above, coupled with known high levels of lead in dirt and dust, indicate that children could easily ingest enough lead by this route to be significant.

E. Various studies indicate that cases of lead poisoning and significant overexposure are not always associated with urban home environments in which sources of peeling or chipping leaded paint were observed. These studies include children residing primarily in inner city areas. Admittedly children may be exposed to peeling or chipping leaded paint in environments away from their own homes. However, since several recent studies indicate that up to 50 percent of children with excessive lead exposure are known to not reside in homes where peeling lead based paint can be found, it is unlikely that peeling paint exposure away from the homes accounts totally for this difference. Furthermore, extension of blood lead screening programs outside of slum areas indicates that the lead exposure problem is found in children residing in higher income areas where peeling paint is not frequent and exposure to this source away from the home is less likely. In conjunction with these findings, residence near roadways have been found to contain higher quantities of lead than those measured away from the road. Findings such as these indicate that in some circumstances dust lead is an important factor and at times may be the primary factor contributing to excessive lead exposure associated with subclinical if not clinical effects.

F. Clinical symptoms resulting from very high lead exposure in children are known to be associated with permanent neurologic damage. It has also long been suspected, but not proven beyond doubt, that lead exposures below those sufficient to cause clinical symptoms in children are also harmful. In particular it has been observed that physiologically significant biochemical changes occur in children with excessive exposures below clinical toxicity and it has been proposed that these changes are reflective of subclinical changes that precede overt disease. Recently available scientific information, though far from completely resolving this issue, supports the view that adverse effects due to lead in children are not confined only to situations in which overt clinical symptoms of lead poisoning occur. Included in these findings are increased subtle neurological impairments among children more highly exposed to lead below levels known to cause clinical disease.

III. *Will a reduction of lead in gasoline reduce the incidence of clinical lead poisoning in children?* Ingestion of peeling paint has long been recognized as the primary cause of clinical lead poisoning in children. This position has been expressed in many comments received by the Agency including those from several noted authorities in the field of lead poisoning. For this reason, numerous comments have questioned the need to reduce lead in gasoline on the basis that this action would have little if any impact on reducing the incidence of clinical lead poisoning in children.

While EPA recognizes the importance of leaded paint as a source of lead for children and has supported governmental efforts to reduce this risk, the findings of several studies suggest that lead poisoning can develop in the absence of significant sources of leaded paint. Though this possibility does not affirm that reducing lead in gasoline will reduce the incidence of lead poisoning in children it indicates that lead in gasoline may, in conjunction with other nonpaint sources, contribute to the development of lead poisoning. Whatever the impact this reduction may have upon clinical lead poisoning, the action will significantly reduce lead exposure among children.

EPA is also concerned about the probability that children exposed to lead at

levels below those associated with clinical poisoning are also being adversely affected. Several effects identified as subclinical lead effects include impairment of fine motor functions, and altered behavior.

It is noteworthy that in a significantly large percentage of excessive lead exposure cases (up to 50 percent in some instances) peeling lead based paint in the home cannot be identified as a source of the exposure. Thus, while leaded paint is recognized as the major cause of childhood lead poisoning, it is not clear that leaded paint is singly responsible for the large degree of excess childhood lead exposure in this country.

IV. *Excess lead exposure among the general population could result from a combination of lead sources, not one of which by itself is sufficient to be a problem. Under these circumstances, would it not be preferable to formulate a control strategy based upon reducing lead levels among those sources that contribute the most to this total exposure?* It is generally agreed that food is the major source of lead to the general population. A World Health Organization expert committee reports that according to the results of total diet studies in industrialized countries, the total intake of lead from food generally ranges from 200–300 ug per person per day. WHO further states that based upon available data, these levels are similar to those found in the past 30–40 years and that no upward trend in lead levels in food is evident.

This information suggests that the level of lead in food has remained relatively constant in recent times. Though lead in food would certainly contribute to total lead exposure for the general population, lead in food is probably not the source that is most readily reduced in the event that total exposure to lead is excessive. According to WHO, "Any increase in the amount of lead derived from drinking water or inhaled from the atmosphere will reduce the amount that can be tolerated in food. The lead in air is probably the contribution that is most accessible to action for reducing the total body burden of lead, especially where this fraction is large compared with that absorbed from food."

V. *What new information has become available since reproposal of the regulation and as a result of the additional comment period?* The majority of comments addressed the evidence presented by EPA in support of its proposed regulation and did not introduce new evidence. The number of comments received were approximately evenly divided between those in favor and those against. The bulk of comments critical of EPA's health position was submitted by industry or industry affiliated scientists. Independent scientists who commented, not affiliated directly with the industry or environmental groups, were in favor of the regulation by approximately 2/1. Most favorable comments, though often from scientists knowledgeable in the field of lead, provided testimonial support rather than new evidence. Most new data that either was presented in comments or which subsequently became available to EPA does support the need to reduce lead emissions from automobiles. Among these latest data are the following:

(1) Studies of subclinical lead effects in children continue to suggest that fine motor function and behavior are affected. Though this issue is not completely resolved, the new data emphasize the potential subclinical risk.

(2) It has been reaffirmed that high dust lead levels, up to 1% lead content, have been found in children's play areas, inside schools and in homes.

(3) New evidence reaffirms that high dust lead levels can be caused by leaded gasoline. A recent study in Rochester, New York, demonstrates that high dust lead levels in homes are not always associated with peeling paint and that house dust lead levels are higher in urban than suburban homes. A study in Vermont has shown that higher concentrations of lead in house dust are found in homes located near busy roads compared to homes on sidestreets. This latter point is consistent with the previously known fact that air lead fallout decreases with increased distance from roadways. A study by EPA in New York City indicates that higher household dust and soil lead levels are found in areas with greater dust lead fallout from the air as compared to areas with little lead fallout.

(4) Young children living in homes with high dust lead contents have been found to have more lead on their hands than children in homes with low dust lead content. This finding provides an important link in the dust fall lead hypothesis. The finding is consistent with observations that finger prick blood-lead specimen taken from children are routinely contaminated by lead that is present on the fingers.

(5) Studies continue to indicate that a high degree of exposure to environmental lead is not confined to inner city areas. Cases of over-exposure continue to be reported from areas in which leaded paint would not be expected to be the predominant factor.

(6) Studies from Newark, New Jersey, observed that the frequency of lead poisoning and undue lead exposure is doubled among childern living close to major roadways compared to children living farther away.

Other means of achieving lead reductions. Before prescribing regulations based on public health consideration, the Administrator must consider "other technological or economically feasible means of achieving emission standards under section 202." Thus, if EPA determined that a reduction of lead emissions from motor vehicles is necessary for protection of public health or welfare, the feasibility of achieving such a reduction under section 202 (new motor vehicle emission standards) must be considered.

The primary alternative to the use of lead additive regulations to achieve reduction in lead emissions would be to impose a lead emissions standard which would result in the installation of "lead-traps" on motor vehicles. The possibilities of incorporating this alternative, however, are limited by the existing legal and technical realities.

EPA does have the authority to impose a lead emissions standard on new vehicles which would result in the use of lead traps. The earliest that such a regulation could be imposed, however, would be the 1976 model year. Most motor vehicle manufacturers are expected to use lead sensitive emissions control systems to meet the Federal emissions standards which are applicable to new vehicles in 1976. Lead traps cannot adequately protect these systems because they are not capable of trapping all of the lead emitted. Lead-free gasoline will be required in most new vehicles based on the information now before the Agency. See Aerospace Report, PB–205–981, available from National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151. Accordingly, the use of lead traps is relevant principally with regard to in-use vehicles. EPA realizes that lead-tolerant emission control systems may be used on a progressively greater number of new vehicles in the future. However, many of the new technology lead tolerant control systems are expected to operate on low octane gasoline which may not require lead additives. Nevertheless, the Agency is continuing to study the feasibility of using lead traps on new vehicles in the future.

The Clean Air Act does not authorize EPA to establish national emission standards on in-use vehicles. Since lead traps cannot be used successfully on the vast majority of new vehicles and the Agency is legally incapable of requiring them on all in-use vehicles, the use of lead traps is really not a feasible alternative at this time in the Administrator's judgment.

Despite the legal authority obstacle EPA has examined the technological capabilities and costs of lead traps and has determined the regulation of lead additive use is the preferable method of controlling lead emissions.

Other emissions. Concern has been expressed that the control of lead additives may result in the use of other gasoline components or additives which may also have an adverse impact on health. EPA has evaluated the potential use of other additives or greater percentages of certain gasoline components in conjunction with the lower lead levels. This evaluation has been performed in recognition of the Agency's responsibility to assess the environmental consequences of its actions. (See Judge Leventhal's opinion in Portland Cement V. Ruckelshaus, 5 ERC 1593, 1599, U.S. App. D.C. (1973).)

Lead additives are used as efficient octane boosters in gasoline. If the use of lead is restricted, the refiner must use greater quantities of blending stocks with high aromatic hydrocarbon concentrations, or substitute anti-knock additives, to increase gasoline octane levels. Consequently, the Administrator has considered the effects of increased aromatic hydrocarbon content of gasoline or the use of manganese additives on emis-

sions from the general motor vehicle population and the effects of these emissions on health. EPA has also considered the impact of the regulations on particulate emissions.

A. *Impact due to increased use of aromatics.* The implementation of the promulgated and reproposed lead regulations is projected to result in a 5 to 7 percent increase in the average aromatics content of gasoline. Concern has been expressed that this increase will cause a complementary increase in the reactivity of automobile exhaust and in the quantity of polynuclear aromatic emissions from the motor vehicle population. EPA has determined that neither the reactivity of automobile exhaust or the emissions of polynuclear aromatics will increase above current levels due to the lead regulations.

Emissions reactivity. Gasoline is composed of three general types of hydrocarbon: aromatics, olefins, and paraffins. Aromatics and olefins are highly reactive and facilitate the formation of photochemical smog. Assuming no hydrocarbon emission controls, aromatics emissions are linearly related to the aromatic content of gasoline. Olefin emissions are directly related to the olefin and paraffin content of gasoline. An increase in the aromatic content of gasoline is accompanied by a decrease in the paraffin and olefin content. Consequently, reactive aromatic emissions increases resulting from an increase in the aromatic content of gasoline are generally offset by a decrease in the reactive olefin emissions due to a complementary reduction in the olefin and paraffin content of the specified gasoline. Accordingly, the increase in the aromatics content in gasoline will not have a significant impact on automobile emissions reactivity.

The lack of increase in exhaust reactivity due to increased use of aromatics has been verified in smog chamber studies completed by the Bureau of Mines as well as EPA. It should also be noted that aromatic emissions from the automobile population will continue to decrease as vehicles with increasingly stringent hydrocarbon emission control systems replace older uncontrolled vehicles on the road.

A detailed analysis estimating exhaust reactivity and the effect of the EPA fuel regulations has been conducted and reported by Dr. A. P. Altshuller in "Effects of Reduced Use of Lead in Gasoline on Vehicle Emissions and Photochemical Reactivity," February, 1972. This paper is available from the Environmental Protection Agency's Office of Public Affairs, Publications Section, Room 238 W, 401 M Street, SW., Washington, D.C. 20460.

Polynuclear aromatic emissions. Polynuclear aromatic hydrocarbons (PNA) are carcinogenic and are primarily caused by hydrocarbon emissions from stationary sources such as petroleum refineries and coke ovens. Currently automobile emissions account for less than 2 percent of total PNA emissions.

Polynuclear aromatic emissions from the general automobile population have been steadily declining since the introduction of hydrocarbon emission controls in 1968. Due to the continued attrition of older uncontrolled vehicles from the road and the introduction of new vehicles with stringent hydrocarbon controls, PNA emissions should be reduced by more than 75 percent from current levels by 1980. This assumes the implementation of both the promulgated lead-free and reproposed low-lead regulations will have a very slight impact on the rate of decrease in PNA emissions. According to a recent EPA analysis, PNA emissions will be reduced by 78 percent by 1980 assuming the implementation of the 1976 hydrocarbon emission standards. If the lead regulations are implemented, PNA emissions will decrease by 76 percent. (An analysis of this problem is contained in a paper entitled "Lead in Gasoline, Impact of Removal on Current and Future Automotive Emissions".) EPA concludes that the current use of lead additives endangers the public health to a greater degree than this difference of 2 percent in the rate of decrease of PNA emissions.

This relative endangerment judgment is based upon the following line of reasoning. Lead additive emissions from automobiles have been determined to pose a sufficient endangerment to health to warrant regulatory action. Mobile sources contribute less than 2 percent of the total polynuclear aromatics emissions. Implementation of the Federal emission standards without the lead additive emissions will result in an approximately 78 percent decrease in polynuclear aromatic emissions from current levels of automobile emissions. Implementation of the lead regulations will slow the rate of emissions decrease by about 2 percent. Assuming automobiles account for the same relative contribution of aromatics in 1980, implementation of the emission standards with the regulations as compared to without the regulations would only cause a 0.04 percent difference in reduction rate in total PNA emissions. In view of the continual decline in PNA emissions and any associated health risk, from stationary sources through particulate controls and from mobile sources through hydrocarbon controls, the health implication of the slight difference in PNA emissions due to the lead regulations is considered negligible.

Although the indication is that the lead regulations will not produce an aromatics or a PNA emission problem, EPA nevertheless has the authority to regulate the aromatic content of gasoline should such action become necessary.

B. *Particulate emissions from unleaded fuel.* Exhaust particulate resulting from the use of leaded and lead-free gasoline has been extensively examined. The examination concluded that since lead additives account for a major portion of exhaust particulates, the use of fuel without lead additives substantially decreases particulates emissions. This conclusion is true for vehicles equipped with emission control devices as well as uncontrolled automobiles.

C. *Use of substitute anti-knock additives.* Various anti-knock additives have been developed, but as is explained in the paper, "Lead in Gasoline" referred to above, the effectiveness of almost all of these additives is severely limited. Manganese is the only fuel additive besides lead which is now recognized as being a cost effective octane booster. While manganese additives are not currently in widespread use in gasoline, manganese may be used as a partial replacement for lead in gasoline. EPA has been examining the impact the use of manganese additives might have on control devices and on the public health.

One automobile manufacturer has recently completed tests using fuel containing 0.25 grams per gallon manganese in vehicles equipped with catalytic emission control systems. While no chemical poisoning was observed, a very high back pressure developed after several thousand miles. This back pressure was due to manganese oxides plugging the catalyst. Apparently, manganese oxides, unlike lead halides, are nonvolatile and physically destroy catalyst functioning by plugging. The 0.25 grams per gallon manganese is above the levels that would be used in fuel by only a factor of two. Accordingly, the plugging problem would eventually occur if manganese is used in lead-free gasoline. Furthermore, deterioration of catalyst performance would occur soon after an individual began using gasoline containing manganese additives. At the present time, the auto manufacturers have not requested that manganese additives be controlled. This may reflect the industry's expectation that manganese additives will not be used in lead-free gasoline. If it is used, EPA would have to consider regulating manganese additives under the authority of section 211(c)(1)(B) of the Clean Air Act.

Occupational experience indicates that airborne manganese at sufficiently high levels of exposure can cause damage to the central nervous system with symptoms similar to that in Parkinson's disease, and can cause manganese pneumonia. Available evidence indicates that dosages required to produce these adverse effects are several orders of magnitude above those that would be present in the ambient air as a result of even the widespread use of manganese as a gasoline additive. Thus, while there presently appears to be a reasonable margin of safety with use of manganese in gasoline, the health implications of this use require continued study. An EPA position paper on manganese is currently being prepared which will be available in the near future. This document will be based upon a comprehensive review of the information available on manganese directed by the National Academy of Sciences.

If regulation of manganese in gasoline for health reasons is found to be necessary, EPA has authority to do so under the Clean Air Act. Though the Agency does not currently have enough evidence to definitely say that manganese in gasoline would pose a threat to health, EPA would not favor the use of manganese in

gasoline until additional studies are completed. However, at this time, the use of manganese additives is judged not to pose as significant a risk to health as that from lead additives.

Cost and energy impacts. Recently EPA has worked with Bonner and Moore Associates to complete a study based on updated information of the impacts associated with the reproposed leaded grade regulations. This study separates the various costs according to two assumptions concerning the portions of the vehicle population which will use lead-free gasolines. The first case assumed all motor vehicles manufactured after 1975 will be equipped with lead sensitive catalytic emission control systems and will thus need lead-free gasoline. The second case assumed an ever increasing portion of the vehicles produced during model years after 1975 will be equipped with emission control systems capable of tolerating leaded gasoline. The second case assumed that by the 1985 model year, all new vehicles will have emissions control systems which can tolerate lead.

Based on this new data, EPA has calculated the annual consumer costs attributable to the low-lead regulations. This calculation includes the increased costs of raw stocks, as well as operating and production costs at the refinery. During 1980, capital investment in the refinery industry is predicted to be roughly $1.5 billion. The low-lead regulation will force the industry to invest an additional $82 million. If a lead-tolerant technology is gradually phased in and thus more leaded gasoline is used, the incremental investment impact of the low-lead regulation will be $113 million. This figure will increase the cost of producing gasoline by less than .1¢ per gallon.

Recently, much concern has been expressed about the potential impact lead regulations would have on the nation's crude oil supply. The low-lead regulations will not go into effect until 1975 and will have a minimal impact on crude oil requirements during this decade. Modeling studies completed by Bonner and Moore Associates demonstrated no positive impact in either 1975 or 1977 on crude usage. If it is assumed that additional leaded gasoline is required to fuel new vehicles equipped with lead tolerant emission control systems which might be partially phased in between 1976 and the end of the decade the impact represents less than a .4 percent increase in crude usage by 1980. If one assumes catalysts are used on all future model vehicles and consequently the quantity of leaded gasoline produced continues to decline, the low-lead regulations never have a significant impact on crude requirements.

It is instructive to compare these numbers with the energy impact of air conditioners in automobiles. Air conditioners have been estimated to have a 13 percent impact on fuel economy. In 1980 if 75 percent of the automobiles are equipped with air conditioners, the impact on crude oil requirements will be approximately 800 thousand barrels per day or roughly 4.4 percent of the nation's needs.

Averaging strategy. The lead regulations proposed on January 10, 1973, would permit each refinery (not company) to average its lead usage over quarterly production of leaded gasoline so long as the average lead content per gallon did not exceed the applicable standard. Leaded pool averaging was proposed for comment based upon the determination that this approach afforded optimum refining flexibility consistent with attainment of the Agency's goal of 60–65 percent reduction in lead usage.

In light of additional information and views received during the comment period, EPA has reviewed the merits of two alternatives to leaded pool averaging. These are (1) a system of total pool averaging, permitting a refinery to average its lead usage over all grades of gasoline produced including the unleaded grade, and (2) permitting each refinery a choice between leaded pool averaging and total pool averaging. Analysis of the impacts and practicalities of the alternative averaging approaches has led EPA to conclude that total pool averaging should be adopted.

Comparing the effects of leaded pool averaging and total pool averaging shows that refiners who market two grades of gasoline, one leaded and one unleaded grade, are significantly penalized by leaded pool averaging. Because two grade marketers are unable to count production of unleaded gasoline in computing the average, a leaded pool standard exerts pressure to market three grades of gasoline, including two leaded grades, to maximize allowable lead usage. Leaded pool averaging similarly tends to penalize three grade marketers who produce more than the industry average proportion of unleaded gasoline. It benefits refiners who produce little or no unleaded gasoline.

Total pool averaging is not expected to induce three-grade marketers to opt for two grades, but does not tend to discourage production of unleaded gasoline. A total pool standard permits each refiner to use the same amount of lead for equivalent gasoline production and is more neutral in its effect upon industry marketing decisions.

The alternative of allowing each refinery a choice between leaded pool and total pool averaging would permit each refinery to choose the system that maximizes lead usage. The price of this flexibility is that lead reduction goals would not be achieved. It is not possible under an option system to predict what reductions in lead usage would be achieved under the regulations. The reductions achievable under an option system would depend on the mix of leaded and unleaded gasoline sales, the sales volumes, and the marketing plans of all gasoline refiners. The option alternative does not permit reasonable estimates of the reductions in lead usage attainable under any given pair of standards.

A majority of the refiners who commented on the regulations recommended that total pool averaging be adopted. The Administrator finds that total pool averaging is in fact the fairest workable mechanism for accomplishing the necessary reduction in lead usage.

Computation of total pool standard. The promulgation of a total pool average standard requires that the reproposed leaded pool standard be adjusted to take account of projected sales of all gasoline. The method of computation is to multiply the numerical leaded pool standard by the percentage of leaded gasoline sales estimated for the particular year. For example, 2 grams per gallon × the percentage of 1975 sales of leaded gasoline= the total pool standard for 1975.

Future sales of unleaded and leaded gasoline cannot be predicted with complete assurance. Actual sales of unleaded gasoline will depend upon the number of vehicles requiring it to meet emission standards, the extent to which owners of vehicles not requiring unleaded gasoline will buy it, and the projected miles driven and fuel consumption of vehicles in the various model year classes.

A study entitled "Alternative Proposals for the Regulation of Lead Additives in Gasoline" prepared for EPA by the firm of Turner, Mason, and Solomon in June, 1972, sets forth estimates based on different assumptions affecting sales of leaded and unleaded gasoline. The estimates selected by EPA as most consistent with present trends in unleaded gasoline sales are provided in case I of the Turner, Mason and Solomon Report. Case I assumes no extension of the 1975 standards, eliminating the need for unleaded gasoline, but that owners of pre-1975 model year motor vehicles will purchase little or no unleaded gasoline.

EPA recognizes that the assumption that owners of pre-1975 vehicles will purchase little or no unleaded gasoline results in conservative estimates of unleaded gasoline sales, but this assumption is offset by the fact that not all 1975 vehicles will require unleaded gasoline.

Using the Case I estimates of future sales of leaded and unleaded gasoline, the conversion of the proposed leaded pool standard to a total pool standard is as follows:

Year	Leaded pool std.	Percent of sales unleaded	Total pool std.
1975	2.0	82.2/17.8	1.644=1.6
1976	1.7	69.8/30.2	1.186=1.2
1977	1.5	59.5/40.5	.89 = .9
1978	1.25	50.9/49.1	.63 = .6
1979	1.25	43.6/56.7	.54 = .5

The promulgated reduction schedule is derived from the table above, but the schedule has been adjusted to moderate the economic and technological impacts of the regulations during the period over which the reductions would be accomplished. To achieve the targeted 60–65% reduction in lead usage requires that the schedule be extended to include 1979. The total pool standard corresponding to the proposed leaded pool standard for 1979 is .5 gram per gallon. As stated above, the schedule promulgated is as follows:

January 1, 1975	1.7 grams per gallon.
January 1, 1976	1.4 grams per gallon.
January 1, 1977	1.0 grams per gallon.
January 1, 1978	.8 grams per gallon.
January 1, 1979	.5 grams per gallon.

This reduction schedule will achieve the 60–65 percent reduction in lead usage and emissions as planned and will also assure that industry's lead usage under total pool standards is approximately the same as the lead usage projected under the leaded pool standards previously proposed.

The standard will have to be evaluated in 1978 to determine what further reductions in the lead standard, if any, are necessary to maintain lead emissions at the desired level. Presumably no further reductions will be required if unleaded gasoline remains the fuel required for new motor vehicles. If unleaded gasoline is no longer required for new vehicles, the 1978 standard will be reexamined in light of increasing gasoline demand.

Combining refineries for purposes of averaging. Two refiners have requested that the regulations be changed to authorize EPA to approve combinations of refineries for purposes of computing the average instead of requiring averaging at each refinery. This approval would be requested to enable a company to concentrate production of leaded or unleaded gasoline at particular refineries.

EPA proposed averaging at each refinery instead of each company in order to mitigate any regional variation in lead emissions due to averaging. Regional variation could result from the mix of gasoline grades sold in a particular market if a company used its lead allotment mainly in one grade or from a company's decision to produce high-lead gasoline at an old southeast refinery and low-lead gasoline at a newer west coast facility, each serving different markets. Requiring lead levels to be moderated at each source is a reasonable effective means of minimizing variation in the area where the gasoline is actually sold.

Although one company has suggested that the location of the refineries in a particular EPA region might serve as a basis for approving combinations, this criterion does not provide assurance that the areas served by those refineries and other refineries would not be subject to variation in lead emissions. There is no necessary correlation between the location of the refineries and their service areas. The Administrator has concluded that there are no workable criteria for assessing the impact of combinations for purposes of averaging and that the refiners' desire for added flexibility in lead usage cannot be accommodated without compromising the objective of minimal variation in reduction in lead emissions in all parts of the country.

Averaging period. Many refiners requested an annual or semiannual averaging period instead of the quarterly period proposed. A longer averaging period would accommodate seasonal variations in lead usage. Because high volatility, high octane blending stocks are used in the winter season to facilitate cold starts, less lead is needed in winter blends. The refiners would like to be free to put more lead in summer blends, and a longer averaging period would make this possible.

The summer season is also the period of maximum exposure to airborne and dustborne lead for both children and adults. For this reason, EPA is unable to agree to the change proposed in the averaging period.

Small refiners. The reproposed regulations provided for a one-year delay of the requirement to comply with the lead reduction schedule for small refiners, as defined in § 80.20(b), in recognition of special lead-time problems faced by this group. EPA has reviewed the lead-time requirements of the small business refiners with particular reference to the effect on lead-time, if any, of the change to a standard based on total pool averaging. The Agency recognizes that under the reproposed leaded pool standard, refiners producing little or no unleaded gasoline received the benefit of a higher average lead level per gallon of leaded gasoline. Some small refiners fall into this category, and would have been able to use more lead under a leaded pool standard taking account of production of unleaded gasoline by other refiners.

EPA's evaluation of the small refiners' situation has led to the conclusion that these refiners require additional lead-time for compliance beyond the one year deferment previously proposed. This appears to be the case regardless of the averaging strategy adopted. Industry and consultants' estimates of time required by small refiners to plan, finance, and construct upgraded refining facilities range from two to three years from the date of promulgation of final standards. Accordingly, the Administrator has determined that it is reasonable and necessary to defer the requirement for compliance by small refiners until January 1, 1977. On this date, small refiners are required to comply with the 1977 standard.

Review of lead reduction program. In the January 10, 1973, reproposal of the regulations, the Administrator stated his intention to reduce the lead content in gasoline as much as possible, giving consideration (a) to the degree of reduction achieved by introduction of unleaded gasoline and (b) evidence on the feasibility of reducing lead from other environmental sources. It is too early to state whether unleaded gasoline sales will expand steadily through the seventies. Studies of potential reduction in lead from other sources are in progress. Accordingly, the Administrator has determined that it would be premature to announce a decision on the need for further reductions in lead in gasoline. EPA will review progress under the regulation as well as additional studies every three years, beginning in 1977. This review will afford a firmer basis for a decision on whether further action is necessary to regulate lead in gasoline to protect public health and welfare.

Reporting by lead additive manufacturers. The January 10, 1973 reproposal included a requirement that lead additive manufacturers would report quarterly to the Administrator on their shipments of lead to each refinery. No comments were received on this proposal, which is promulgated below as proposed. The basis for the requirement—that it is determined to be necessary for verification of lead additive usage reports by refineries—has not changed.

Prevention of violations by refiners. As a complementary measure to the January 10, 1973 promulgation of a strict liability provision in § 80.23 applicable to refiners, the Agency on that date proposed a provision specifying that it is the refiner's duty to prevent violations of § 80.22(a). Two refiners and one petroleum trade association commented that practical and legal considerations made the regulation unreasonable, particularly as regards the requirement on permitting violations. One other refiner commented that if the requirement was to be adopted, it should provide for a showing by the refiner that he in fact did not cause or permit a given violation.

The issue of vicarious liability under § 80.23 is now in litigation and the Agency is engaged in negotiations with refiners which may lead to revision of the provision. Accordingly, no action is being taken on the proposed § 80.20(c), but it is not being withdrawn.

Control of lead under Title I. One commentator has contended that the Clean Air Act requires the Administrator to establish a national ambient air-quality standard for lead under Title I or, at least, to impose controls under § 211 that would achieve results which would be as protective of health on as expeditious a timetable as could have been achieved under Title I. The commentator, an environmental group, concludes that the reproposed lead reduction schedule would achieve "far less effective and timely results than action under Title I because the reproposed schedule is so weak," and petitioned EPA for the issuance of national ambient air quality standards for lead.

It is clear from Agency actions to date that the Administrator has chosen to regulate lead emissions under section 211 of the Act. No action on lead under Title I is currently planned.

It is the Administrator's judgment that he may regulate a substance under section 211 without necessarily tailoring his action to what could have been accomplished under sections 108, 109, and 110, since section 211 is a co-equal grant of regulatory authority. The determination whether to issue a criteria document for a substance and thereby set Title I actions in motion is discretionary with the Administrator. Section 108 expressly recognizes this, inasmuch as it required the Administrator to list for action under Title I only those air pollutants "for which air quality criteria had not been issued before the date of enactment of the Clean Air Amendments of 1970, but for which he plans to issue air quality criteria. (emphasis added) This falls considerably short of a statutory directive to issue criteria for lead,

and may be contrasted readily with the requirements of section 202(b) of the Act specifically identifying carbon monoxide, hydrocarbons, and oxides of nitrogen for regulatory action. While, as the commentator points out, language in the Senate Report on its version of the 1970 Clean Air Act amendments stated that the bill would require issuance of a criteria document for lead, this must be construed as only a statement of the Committee's preference, since no such requirement appeared either in the language of the Senate or the conferees' bill.

The regulations promulgated below shall be effective on January 7, 1973.

(42 U.S.C. 1857f–6c, 1857g(a))

Dated: November 28, 1973.

JOHN QUARLES,
Acting Administrator,
Environmental Protection Agency.

Part 80 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 80.1, the second sentence is revised to read as follows:

§ 80.1 Scope.

* * * These regulations are based upon a determination by the Administrator that the emission product of a fuel or additive will endanger the public health, or will impair to a significant degree the performance of a motor vehicle emission control device in general use or which the Administrator finds has been developed to a point where in a reasonable time it would be in general use were such regulations promulgated; and certain other findings specified by the Act.

2. In § 80.2, a new paragraph (m) is added as follows:

§ 80.2 Definitions.

* * * * *

(m) "Lead additive manufacturer" means any person who produces a lead additive or sells a lead additive under his own name.

3. A new § 80.20 is added as follows:

§ 80.20 Controls applicable to gasoline refiners.

(a)(1) In the manufacture of gasoline at any refinery, no gasoline refiner shall exceed the average lead content per gallon specified below for each 3-month period (January through March, April through June, July through September, October through December):

(i) 1.7 grams of lead per gallon, after January 1, 1975;

(ii) 1.4 grams of lead per gallon, after January 1, 1976;

(iii) 1.0 grams of lead per gallon, after January 1, 1977;

(iv) 0.8 grams of lead per gallon, after January 1, 1978;

(v) 0.5 grams of lead per gallon, after January 1, 1979.

(2) For each 3-month period (January through March, April through June, July through September, October through December) the average lead content per gallon shall be computed by dividing total grams of lead used at a refinery in the manufacture of gasoline by total gallons of gasoline manufactured at such refinery.

(3) For each 3-month period (January through March, April through June, July through September, October through December) commencing with the period January 1, 1975 through March 31, 1975, each refiner shall submit to the Administrator a report showing for each refinery (i) the total grams of lead in lead additive inventory on the first day of the period, (ii) the total grams of lead received during the period, (iii) the total grams of lead in lead additive inventory on the last day of the period, (iv) the total gallons of gasoline produced by such refinery during the period, and (v) the average lead content in each gallon of gasoline produced during the period. Reports shall be submitted within 15 days after the close of the reporting period, on forms supplied by the Administrator upon request.

(b) The provisions of paragraph (a)(1)(i) and (ii) of this section shall not be applicable to any refiner which does not have more than 30,000 barrels per day crude oil or bona fide feed stock capacity from owned or leased facilities or from facilities made available to such refiner under an arrangement such as, but not limited to, an exchange agreement (except one on a refined product for refined product basis), or a throughput or other form of processing agreement, with the same effects as though such facilities had been leased.

4. A new § 80.25 is added as follows:

§ 80.25 Controls applicable to lead additive manufacturers.

For each 3-month period (January through March, April through June, July through September, October through December) commencing with the period January 1, 1975 through March 31, 1975, each lead additive manufacturer shall submit to the Administrator a report showing the total grams of lead shipped to each refinery by such lead additive manufacturer during the period. Reports shall be submitted within 15 days after the close of the reporting period, on forms supplied by the Administrator upon request.

5. A new § 80.26 is added as follows:

§ 80.26 Confidentiality of information.

Information obtained by the Administrator or his representatives pursuant to this part shall be treated, in so far as its confidentiality is concerned, in accordance with the provisions of 40 CFR Part 2.

[FR Doc.73–25766 Filed 12–5–73;8:45 am]